

IN THE CLAIMS

Please amend the claims as follows.

1. (Previously amended) A polymer of Claim 7, wherein said polymer has an average cationic charge density of 2.77 or less units per 100 daltons molecular weight at a pH of from about 4 to about 12.

2. (Previously amended) A polymer according to Claim 1, wherein said polymer is a suds/foam stabilizer having an average cationic charge density from about 0.01 to about 2.75 units per 100 daltons molecular weight at a pH of from about 4 to about 12.

3. (Previously amended) A polymer according to Claim 1, wherein said polymer has a hydroxyl group density of from about 0.5 or less as measured by the Hydroxyl Group Density Equation.

4. (Previously amended) A polymer according to Claim 1, wherein said polymer comprises:

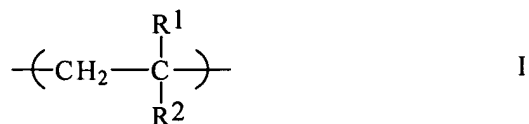
- iv) units capable of having an anionic charge at a pH of from about 4 to about 12;
- v) units capable of having an anionic charge and a cationic charge at a pH of from about 4 to about 12;
- vi) units having no charge at a pH of from about 4 to about 12; and
- vii) mixtures of units (iv), (v), (vi), and (vii).

5. (Original) A polymer according to Claim 2, wherein said polymer has an average molecular weight of from about 1,000 to about 2,000,000 daltons.

6. (Original) A polymer according to Claim 1, wherein said polymer has an average cationic charge density of about 0.75 to about 2.25 units per 100 daltons molecular weight at a pH of about 4 to about 12 and a molecular weight of about 10,000 to about 100,000 daltons.

7. (Currently amended) A polymer consisting essentially of:

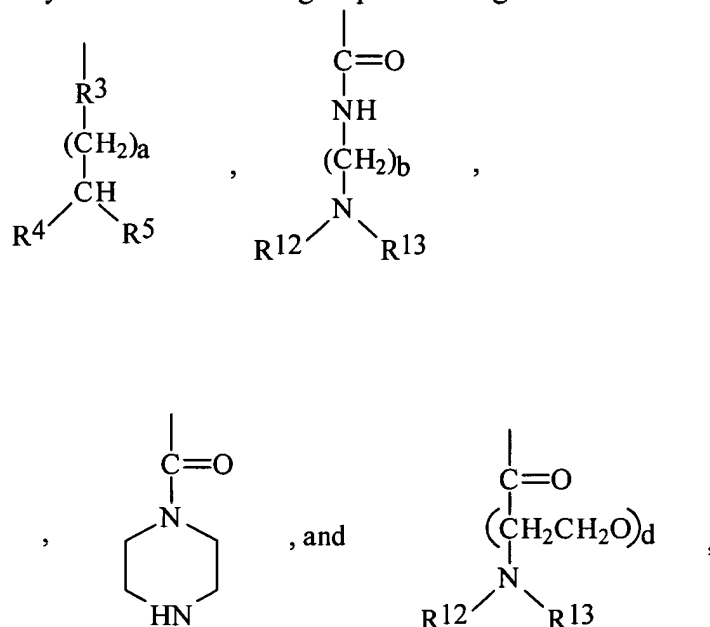
A. at least one cationic monomeric unit A, capable of having a cationic charge at a pH in the range of from about 4 to about 12, having a Formula I:



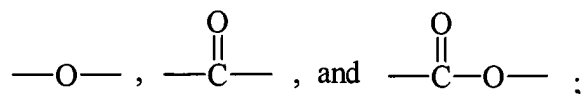
wherein

R¹ is H or an alkyl having 1 to 10 carbon atoms,

R² is a moiety selected from the group consisting of

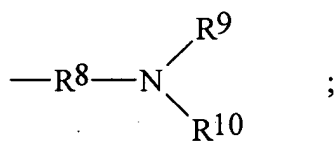


wherein R³ is selected from the group consisting of



a is an integer from 0 to 16; b is an integer from 2 to 10; c is an integer from 2 to 10; d is an integer from 1 to 100;

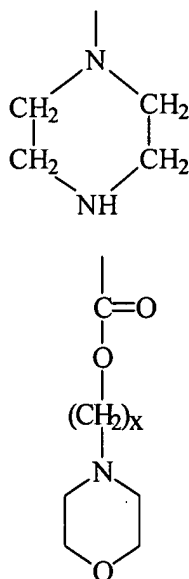
R⁴ and R⁵ are independently selected from the group consisting of -H, and



R⁸ is independently selected from the group consisting of a bond and an alkylene having 1 to 18 carbon atoms;

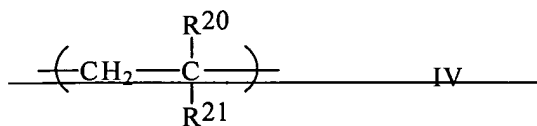
R⁹ and R¹⁰ are independently selected from the group consisting of -H, alkyl having 1 to 10 carbon atoms;

R¹² and R¹³ are independently selected from the group consisting of H and alkyl having from 1 to 10 carbon atoms;



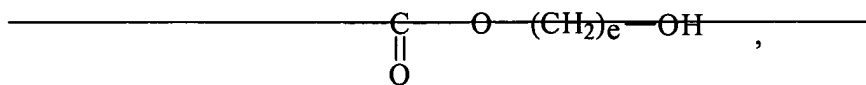
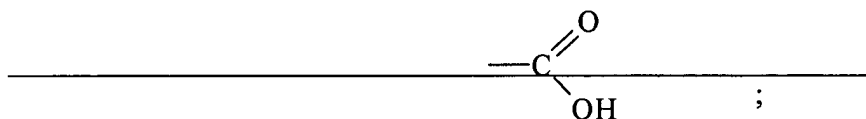
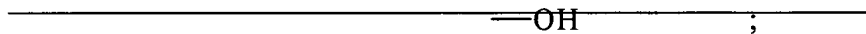
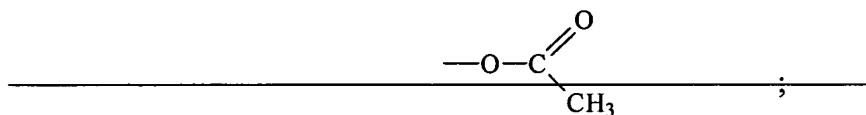
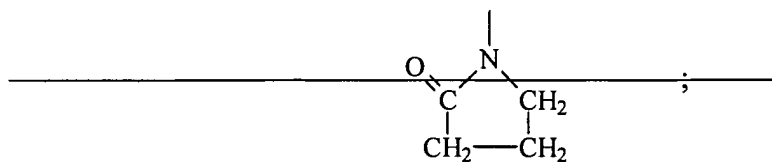
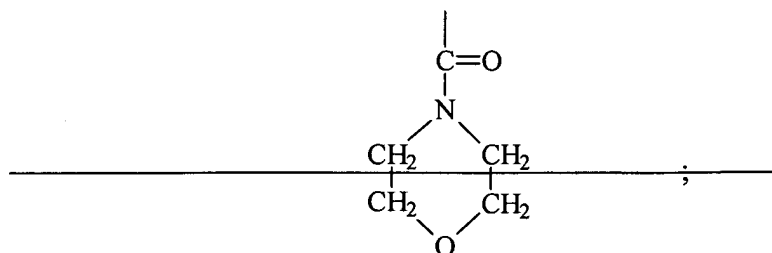
wherein x is an integer from 2 to 10;

B. at least one monomeric unit B selected from the group consisting of:
a monomeric unit of Formula IV

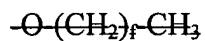


wherein R^{20} is selected from the group consisting of H and CH_3 ;

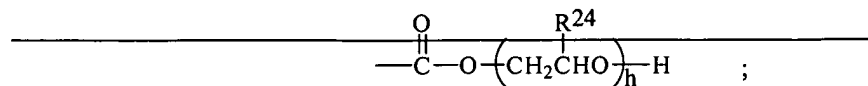
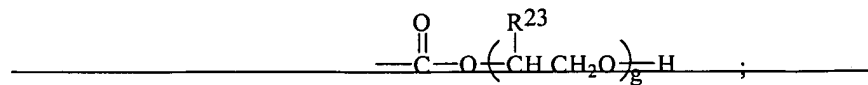
R^{21} is selected from the group consisting of:



wherein e is an integer from 3 to 25;



wherein f is an integer from 0 to 25;

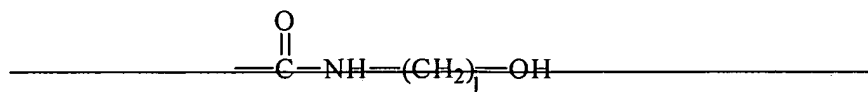


wherein g is an integer from 1 to 100;

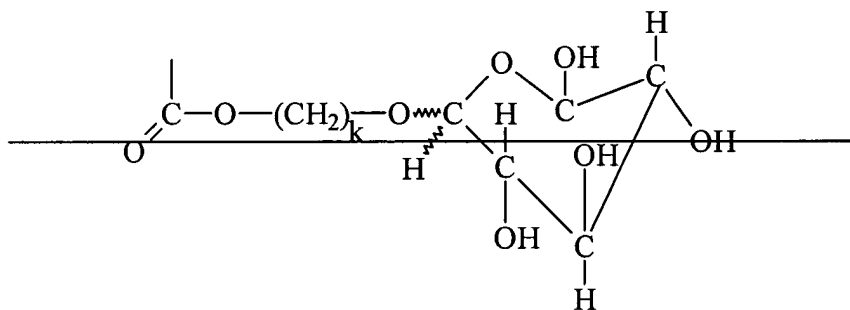
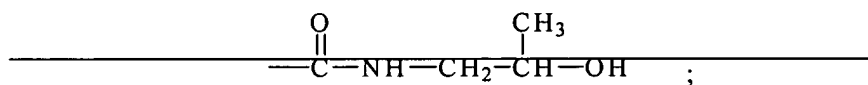
h is an integer from 1 to 100;

R^{23} is H, CH_3 or C_2H_5 ;

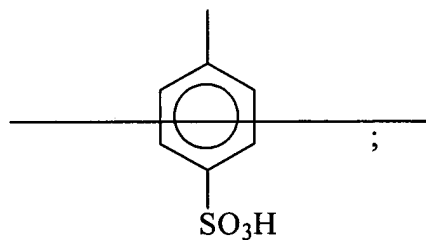
R^{24} is CH_3 or C_2H_5 ;



wherein j is an integer from 1 to 25;

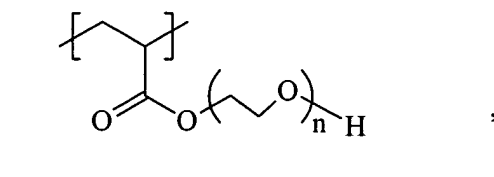
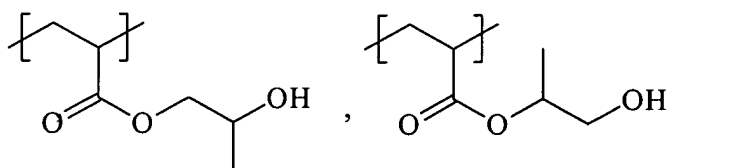
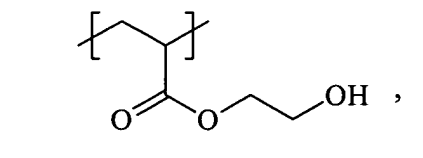
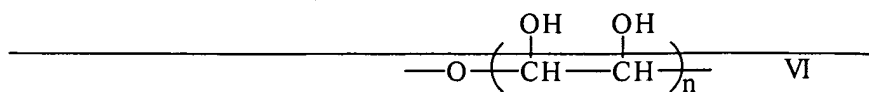


wherein k is an integer from 1 to 25;



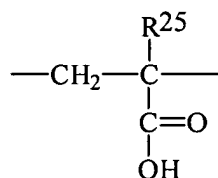
$\text{---NH}(\text{CH}_2)_m\text{NH}_2\text{HCl}$, wherein m is an integer from 1 to 25; and

a polyhydroxy monomeric unit of Formula VI:

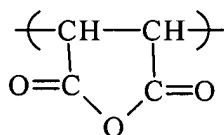


wherein n is an integer from 1 to 50; and

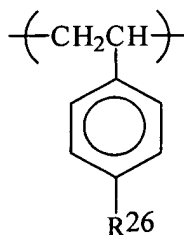
C. optionally at least one monomeric unit C selected from the group consisting of:



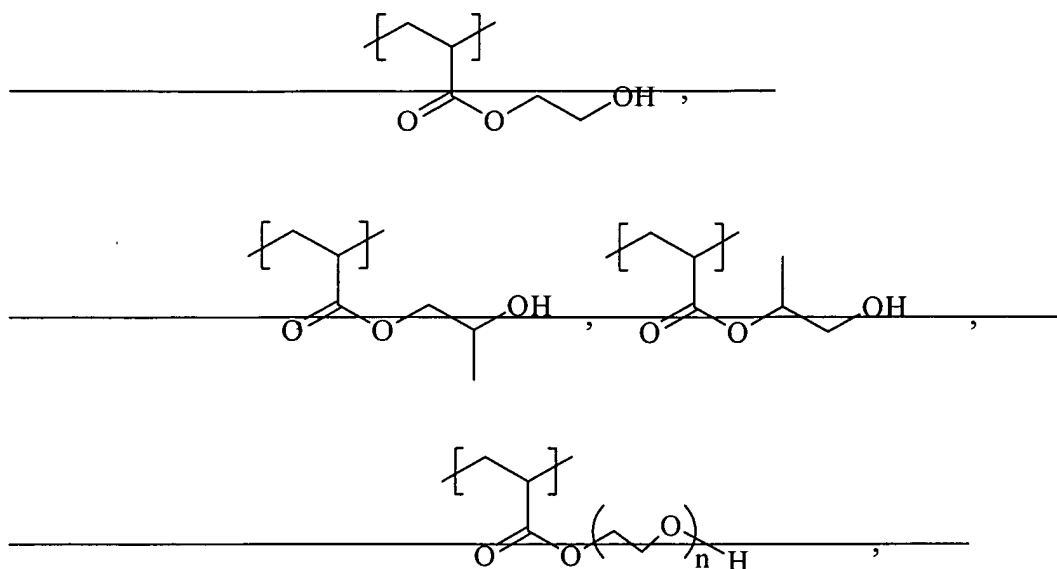
wherein R²⁵ is -H or -CH₃,



and



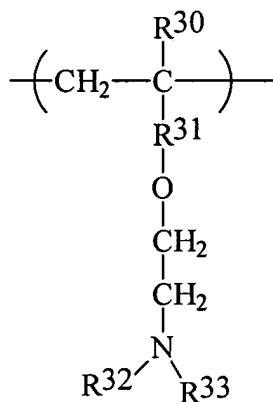
wherein R²⁶ is -H or CH₃, ~~wherein said at least one monomeric unit B is selected from the group consisting of:~~



wherein n is an integer from 1 to 50.

8. (Original) The polymer of Claim 7, wherein said polymer comprises at least one said monomeric unit A, at least one said monomeric unit B and at least one said monomeric unit C.

9. (Original) The polymer of Claim 7, wherein said at least one monomeric unit A is selected from the group consisting of:

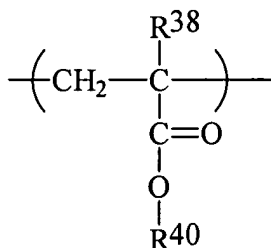


wherein R^{30} is H or $-\text{CH}_3$,

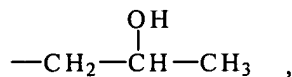
wherein R^{31} is a bond or $\text{—}\overset{\text{O}}{\parallel}\text{C—}$, and
 R^{32} and R^{33} are —CH_3 or $\text{—C}_2\text{H}_5$.

10. (Currently amended) The polymer of Claim 9, wherein said polymer is a terpolymer,

said at least one monomeric unit B is selected from the group consisting of:



wherein R^{38} is selected from the group consisting of H and CH_3 - and
 R^{40} is selected from the group consisting of $\text{—CH}_2\text{CH}_2\text{—OH}$ and

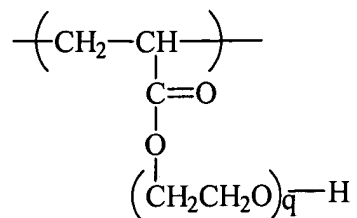


and isomers thereof $\text{—}\overset{\text{CH}_3}{\underset{|}{\text{CH}}}\text{—CH}_2\text{—OH}$,

said terpolymer comprising said at least one monomeric unit C,

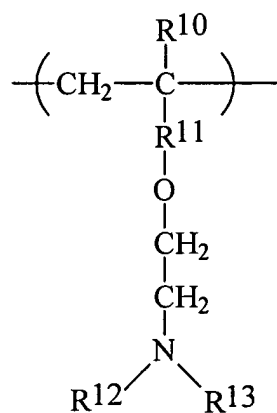
wherein the molar ratio of said monomeric unit A : monomeric unit B : monomeric unit C
is 1 to 9 : 1 to 9 : 1 to 6 respectively.

11. (Original) The polymer of Claim 7, wherein the at least one monomeric unit B has the formula:



wherein q ranges from 1 to 12.

12. (Original) The polymer of Claim 11, wherein the polymer is a terpolymer, said at least one monomeric unit A is selected from the group consisting of:

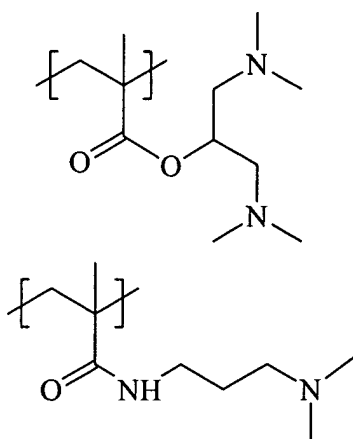


wherein R¹⁰ is H or CH₃,

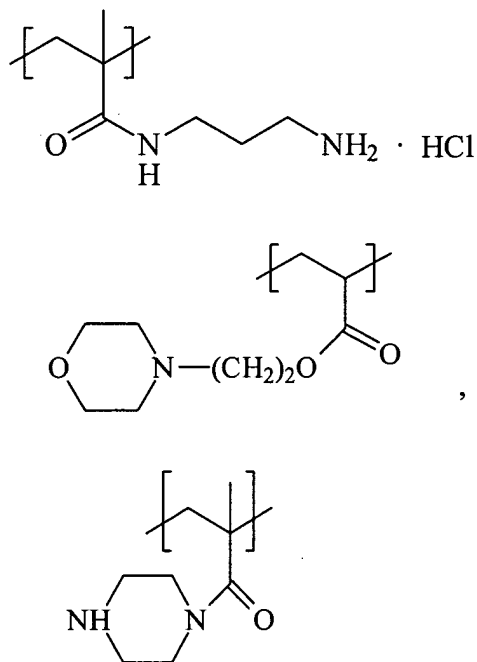
R¹¹ is a bond or $\text{---}\overset{\text{O}}{\parallel}\text{C---}$, and R¹² and R¹³ are ---CH_3 or $\text{---C}_2\text{H}_5$, and said monomer comprises said at least one monomeric unit C.

13. (Original) The polymer of Claim 12, wherein the molar ratio of monomeric unit A : monomeric unit B : monomeric unit C ranges from 1 to 9 : 1 to 9 : 1 to 3 respectively.

14. (Withdrawn) The polymer of Claim 7, wherein said at least one monomeric unit A has a formula selected from the group consisting of:



15. (Withdrawn) The polymer of Claim 7, wherein said at least one monomeric unit A has a formula selected from the group consisting of:



16. (Cancelled)

17. (Original) The polymer of Claim 7, selected from the group consisting of:

poly(HEA-co-DMAM-co-AA) terpolymer,

poly(HPA-co-DMAM-co-AA) terpolymer, and

poly(PEG-acrylate-co-DMAM-co-AA) terpolymer.

18. (Currently Amended) The polymer of Claim 7, ~~is selected from the group consisting of:~~ poly(HEA-co-DMAM) copolymer, ~~poly(DMAM-co-butylvinylether) copolymer and poly(2-diethylaminoethylvinyl ether-co-ethyleneglycol monovinyl ether).~~

19. (Withdrawn) A method for cleaning hair or skin comprising applying an effective amount of a cleaning composition comprising the polymer of Claim 1 and at least one deterative surfactant to hair or skin in need of cleaning, provided that a 10% aqueous solution of said composition has a pH from about 4 to about 9.

20. (Withdrawn) The method of Claim 19, wherein said composition further comprises at least one member of the group consisting of a pearlizing agent, a silicone hair conditioning agent, and an antidandruff ingredient.

21. (Withdrawn) The method of Claim 20, wherein said composition comprises:

a) said pearlizing agent

b) a nonionic surfactant

c) an amphoteric surfactant

d) a glycol emulsifier

e) water.

22. (Withdrawn) The method of Claim 20, wherein said composition comprises at least one amphoteric surfactant and said amphoteric surfactant comprises at least one member of the group consisting of:

the alkali salts of alkyl amphodipropionates, alkyl amphodiacetates, alkyl amphoglycinates, alkyl amphopropyl sulfonates and alkyl amphopropionates wherein alkyl represents an alkyl group having 6 to 20 carbon atoms.

23. (Withdrawn) The method of Claim 22, wherein in said at least one amphoteric surfactant the alkyl group is derived from coconut oil or is a lauryl group.

24. (Withdrawn) A method for cleaning hair or skin comprising applying an effective amount of a cleaning composition comprising the polymer of Claim 5 and at least one surfactant to hair or skin in need of cleaning.

25. (Withdrawn) A composition for cleaning hair or skin comprising:
the polymer of Claim 1,
at least one deterative surfactant, and at least one member of the group consisting of a pearlizing agent, a silicone hair conditioning agent, and an antidandruff ingredient, provided that a 10% aqueous solution of said composition has a pH from about 4 to about 12.

26. (Withdrawn) A composition for cleaning hair or skin comprising:
the polymer of Claim 7,
at least one surfactant, and at least one member of the group consisting of a pearlizing agent, a silicone hair conditioning agent, and an antidandruff ingredient.

27. (Withdrawn) The composition of Claim 26, wherein said silicone compound is an alpha, omega-trimethylsilyl-polydimethylsiloxane having a viscosity at 25°C of at least 25 centistokes and less than 60,000 centistokes.

28. (Withdrawn) A method for washing a fabric article in a washing medium comprising:

applying an effective amount of a laundry cleaning composition comprising the polymer of Claim 1 and at least one detergent surfactant to a fabric article in need of cleaning.

29. (Withdrawn) The method of Claim 28, wherein said composition washes a colored fabric article.

30. (Withdrawn) The method of Claim 28, wherein said composition comprises at least one member of the group consisting of an aminosilicone, a Gemini surfactant, a detergency builder, a bleach, an activator for percompound bleach, a soil suspending agent, a soil antiredeposition agent, a foam suppressant agent and a fabric softener.

31. (Withdrawn) The method of Claim 28, wherein said composition comprises a foam suppressant agent.

32. (Withdrawn) A method for washing a fabric article in a washing medium comprising:

applying an effective amount of a laundry cleaning composition the polymer of Claim 7 and at least one detergent surfactant to a fabric article in need of cleaning.

33. (Withdrawn) A detergent composition for washing a fabric article comprising:
the polymer of Claim 1;
at least one detergent surfactant; and
at least one member of the group consisting of an aminosilicone, a Gemini surfactant, a detergency builder, a bleach, an activator for percompound bleach, a soil suspending agent, a soil antiredeposition agent, a foam suppressant agent and a fabric softener;
provided that a 10% aqueous solution of said detergent composition has a pH of from about 4 to about 12.

34. (Withdrawn) A method for extinguishing fire comprising applying a foam to a fire, wherein the foam comprises a foaming agent and a polymer of Claim 1.

35. (Withdrawn) A method for treating agricultural substrate selected from the group

consisting of plants, soil or seed comprising,

applying to the substrate a foam comprising at least one agricultural chemical selected from the group consisting of a herbicide, a pesticide, and a fungicide, a foaming agent and a polymer of Claim 1.

36. (Withdrawn) A method comprising, injecting into a subterranean formation, a foam comprising a foaming agent and a polymer of Claim 1.

37. (Withdrawn) A method for shaving hair from skin comprising applying foam shaving cream to the skin, said shaving cream comprising a foaming agent and a polymer of Claim 1.

38. (Withdrawn) A method for shaving hair from skin comprising applying a shaving gel to the skin, said gel comprising a foaming agent and a polymer of Claim 1.

39. (Withdrawn) A method comprising applying a depilatory foam to skin, said foam comprising a foaming agent and a polymer of Claim 1.

40. (Withdrawn) A method of cleaning hard bathroom surfaces comprising applying to said surfaces a foam cleaner comprising a foaming agent and a polymer of Claim 1.

41. (Withdrawn) A process for making paper comprising aiding retention of titanium dioxide on the paper during the paper making comprising treating the paper with an aqueous solution comprising titanium dioxide and a polymer of Claim 1.

42. (Cancelled)

43. (New) The polymer of Claim 7, consisting of:

- A. said at least one cationic monomeric unit A,
- B. at least one monomeric unit B; and

C. optionally said at least one monomeric unit C.